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# MASSACHUSETTS COLLEGE OF OPTOMETRY



1951-1952

# ACADEMIC CALENDAR

1951-52

## Fall Semester 1951

September 20-21 .....Registration  
September 24 .....Fall Semester begins  
October 12 .....Columbus Day, Holiday  
November 12 .....Armistice Day Celebration, Holiday  
November 29-December 1, incl. ....Thanksgiving Recess  
December 24-January 1, 1952, incl. ....Christmas Recess  
January 21-25 .....First Semester Examinations

## Spring Semester 1952

January 28 .....Second Semester begins  
February 22 .....Washington's Birthday, Holiday  
April 11-19, incl. ....Easter Recess  
May 23-29 .....Second Semester Examinations

*June 6*

*Commencement*

## CORRESPONDENCE

All correspondence should be addressed to  
Registrar, Massachusetts College of Optometry  
178 Newbury St., Boston 16, Mass.

# MASSACHUSETTS COLLEGE OF OPTOMETRY

founded 1894

## Bulletin of Information 1951-1952

### **Administrative Offices:**

178 NEWBURY STREET, BOSTON 16, MASSACHUSETTS

### **Massachusetts Optometric Clinic:**

472 COMMONWEALTH AVENUE, BOSTON 15, MASSACHUSETTS



MASSACHUSETTS COLLEGE  
OF OPTOMETRY

## ADMINISTRATION

### BOARD OF TRUSTEES

JOSEPH F. MONTMINY, O.D., *President*

RALPH H. GREEN, O.D., D.O.S., *Vice-President*

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### OFFICERS OF ADMINISTRATION

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RALPH H. GREEN, O.D., D.O.S. .... *Dean*

CHARLOTTE K. HUNTINGTON, A.B. .... *Registrar*

OTTO HOCHSTADT, M.D. .... *Director of Student Counseling  
and Student Health*

RUTH YUZENAS .... *Librarian*

EDNA M. WALTER, A.B. .... *Director of Publicity  
and Secretary*

JOSEPH ANTANELIS, O.D. .... *Director of Clinic*

JASON H. WOLF, C.P.A. .... *Comptroller*

# FACULTY

## Professors

RALPH H. GREEN, O.D., D.O.S. ....	<i>Optometrical Sciences</i>
OTTO HOCHSTADT, M.D. ....	<i>Medical Sciences</i>
THOMAS E. REYNOLDS, A.B., M.A., Ph.D. ....	<i>Biological Sciences</i>

## Associate Professors

HAROLD CLINE, O.D. ....	<i>Physiological Optics</i>
FOSTER NAMIAS, O.D. ....	<i>Ophthalmic Optics</i>
SAMUEL J. WASSERMAN, B.S., O.D. ....	<i>Geometrical Optics</i>
LESLIE G. WRIGHT, JR., B.S., O.D. ....	<i>Physics &amp; Physical Optics</i>

## Assistant Professor

JOSEPH F. ANTANELIS, O.D. ....	<i>Clinical Optometry</i>
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## Instructors

RICHARD I. ALBERT, B.S., O.D. ....	<i>Applied Optometry</i>
ROGER W. ARNOLD, A.B., M.Ed. ....	<i>Mathematics</i>
ARTHUR O. BRUCE, M.D. ....	<i>Ocular Anatomy &amp; Physiology and Applied Ophthalmology</i>
HENRY L. CABITT, M.D. ....	<i>Ophthalmology</i>
GEORGE E. CARVIN, O.D. ....	<i>Histology</i>
FREDERICK E. FARNUM, O.D. ....	<i>Contact Lenses</i>
HYMAN R. KAMENS, O.D. ....	<i>Clinical Optometry</i>
CHARLES KENT, M.D. ....	<i>Cranial Anatomy</i>
FRANK KOZOL, O.D. ....	<i>Mechanical Optics</i>
MITCHELL KUHN, O.D. ....	<i>Clinical Optometry</i>
ARTHUR F. MARCH, JR., O.D. ....	<i>Optometrical Orientation Ethics, Economics and Jurisprudence</i>
SEYMOUR SALTZMAN, O.D. ....	<i>Clinical Optometry</i>
WILLIAM SMITH, O.D. ....	<i>Clinical Orthoptics</i>
LOUIS WEKSTEIN, A.B., M.A., D.Sc. ....	<i>Psychology</i>
JOHN B. WHITNEY, O.D. ....	<i>Corrective Optometry</i>

## Assistants

HAROLD BOND, O.D. ....	<i>Contact Lenses</i>
LEON M. GINSBURG, O.D. ....	<i>Physiological Optics</i>

## Lecturer

JOSEPH G. BRIN, A.B., M.A., LL.B., LL.M., Litt.D. ....	<i>Semantics</i>
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## COMMITTEES OF THE FACULTY

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### Academic Affairs

LESLIE G. WRIGHT, JR., B.S., O.D., *Chairman*

OTTO HOCHSTADT, M.D.

THOMAS E. REYNOLDS, A.B., M.A., Ph.D.

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### Admissions and Promotions

FOSTER NAMIAS, O.D., *Chairman*

SAMUEL WASSERMAN, B.S., O.D.

LESLIE G. WRIGHT, B.S., O.D.

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### Student Counseling

OTTO HOCHSTADT, M.D., *Chairman*

ROGER ARNOLD, A.B., M.Ed.

ARTHUR F. MARCH, JR., O.D.

LOUIS WEKSTEIN, A.B., M.A., D.Sc.

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### Awards

FREDERICK E. FARNUM, O.D., *Chairman*

FOSTER NAMIAS, O.D.

LOUIS WEKSTEIN, A.B., M.A., D.Sc.

## THE PROFESSION OF OPTOMETRY

Optometry is the science of sight. It is defined as the science and art devoted to the examination of the eyes, the analysis of ocular functions, and the employment of preventive and corrective methods and agents for the relief of visual and ocular anomalies.

Optometrists are trained to realize that the eyes are not merely optical instruments but in every sense members of the human body. Knowledge of the eyes cannot remain apart from knowledge of the body. An adequately trained optometrist must be an expert in all matters pertaining to vision and must have a knowledge of ocular anatomy, physiology, and pathology.

The great service rendered by the optometrist is to enable the patient not only to see clearly, but also to see with comfort and efficiency. To this end the optometrist is trained:

1. To ascertain the absence or presence of visual anomalies and to adapt lenses to correct, remedy, or relieve abnormal conditions.
2. To determine the presence or absence of abnormal conditions in focusing and fixating at near distances and to adapt remedial measures to correct, remedy, or relieve these abnormal conditions.
3. In the adaption of lenses and prisms and the use of orthoptic training or other coordinating exercises to correct, remedy, or relieve the effects caused by any defect or abnormal condition of the eye or of the two eyes in associated vision.
4. In the development and re-education of the visual skills, thus increasing visual efficiency and rehabilitating many who otherwise would be handicapped.

## ORGANIZATION AND PURPOSE

The Massachusetts College of Optometry was established in 1894 as the Klein School of Optics by the late August A. Klein, M.D. In 1909, the Massachusetts School of Optometry was founded and conducted under the leadership of the late Theodore F. Klein, O.D. In 1946, the Massachusetts School of Optometry was incorporated by the Commonwealth of Massachusetts as a non-profit educational institution for the advancement of optometrical education.

In April, 1950, the Board of Collegiate Authority of the Commonwealth of Massachusetts authorized the change of name to Massachusetts College of Optometry and authorized the College to confer the degree of Bachelor of Science in Optometry.

The immediate responsibilities of the College reside in a Board of Trustees elected by the members of the Corporation. Membership in the Corporation and on the Board of Trustees represents an assignment of a professional and civic nature with no benefits accruing to any individuals.

The course of instruction offered by the Massachusetts College of Optometry extends over a period of four academic years; the curriculum is planned to train the students for the practice of optometry, to indoctrinate them with the ideals of the profession, and to equip them for successful and ethical practice.

## STANDING OF THE COLLEGE

The Massachusetts College of Optometry is accredited by the Council on Education and Professional Guidance of the American Optometric Association. It is approved, as an institution of higher learning under Veterans Administration Regulations, for training veterans under Public Law 16 and Public Law 346. The College is a charter member of the Association of Schools and Colleges of Optometry.



HISTOLOGY LABORATORY CLASS

## COLLEGE BUILDINGS

The Massachusetts College of Optometry occupies two buildings. The main building, known as the Horace Mann Building, is located at 178 Newbury Street, near Copley Square. This building is a four-story, fire-proof structure providing over 22,000 square feet of floor area and houses administrative and faculty offices, the medical sciences laboratory, the biological sciences laboratory, the optics laboratory, the physics laboratory, lecture halls, the library and reading rooms, student lounges and locker rooms, and snack bar.

The Clinic Building is located at 472 Commonwealth Avenue, in the heart of Boston's medical center. This building is a five-story brick structure providing 8,500 square feet of floor area and houses the clinic, the mechanical optics laboratory, the optometry practice laboratories, and administrative offices.

## CLINICS

The Massachusetts Optometric Clinic is a department of the Massachusetts College of Optometry. The clinical building, located at 472 Commonwealth Avenue, in the heart of Boston's medical center, is specially well adapted for clinical practice.

The clinic is equipped with a variety of modern instruments enabling the senior students, serving as internes, to become familiar with all types of optometrical instrumentation.

The following clinics are maintained: refraction, visual training and orthoptics, visual field study, ocular pathology and subnormal vision. Numerous social agencies in Greater Boston refer patients to the clinic for complete eye and visual service.

In addition to the regular out-patient clinic, senior students attend clinics at the Refraction Department of the Boston Evening Clinic, the Orthoptics Department of the Boston Dispensary, and the Medical Mission Dispensary. Visual screening surveys are conducted in schools, industries, institutions, and community centers.

## LIBRARIES

The library of the Massachusetts College of Optometry contains a wide selection of reference books in the basic, biological, optical, ophthalmological and optometrical sciences, as well as in general medicine, together with a collection of reprints and current periodicals.

In addition to the library the College provides two reading rooms with a total seating capacity of 50.

The library is open to students, with a librarian in charge, daily from 9:00 a.m. to 5:00 p.m. and Saturdays from 9:00 a.m. to 12:00 noon. Students may borrow books according to library regulations.

Students also have access to the facilities of the Boston Public Library and the Boston Medical Library for general reference and study.

## ADMISSION REQUIREMENTS

Each applicant for admission to the Massachusetts College of Optometry must have at least 30 semester hours of acceptable credit from an accredited college of liberal arts and sciences or junior college or its equivalent.

The minimum course requirements for entrance to the first year class are:

English Composition .....	6 semester hours
College Algebra .....	3 semester hours
Plane Trigonometry .....	3 semester hours
General Chemistry .....	6 semester hours
(General Biology, while not required, is recommended.)	

The remaining courses necessary to make up the required number of credits are elective, preferably in cultural subjects.

In the selection of students, the Committee on Admissions and promotions will give precedence to candidates in the order of their scholastic rank as evidenced by their college transcripts.

The College seeks to select for its student body those who not only meet the academic requirements for admission but who also give promise of acquitting themselves creditably in the training program and of being useful members of the profession of optometry after graduation.

Candidates who have been accepted are required to take supplementary aptitude and psychological tests during the first week of attendance. These tests are used primarily to aid the College in assisting the student through its guidance program.

## ADMISSION TO ADVANCED STANDING

Advanced standing to the second year may be granted, provided vacancies occur, to those applicants who can present a minimum of 60 semester hours credit earned at an accredited college of liberal arts and sciences or its equivalent.

Applicants must have completed and received credit for those courses required for admission as well as those given in this institution in the first year with the exception of optometrical orientation and semantics.

An applicant transferring from an accredited college of optometry, in which he is eligible to continue, may receive credit for equivalent courses toward the work of the second year, on the basis of an official transcript. An applicant so admitted must satisfactorily complete the work of the last two years in residence at the Massachusetts College of Optometry.

## PROCEDURE FOR ADMISSION

There is only one entry date each year for new students.

1. Application for admission is filed on forms provided by the College, together with a small unmounted photograph of the candidate.
2. A complete record of high school and college work completed is sent directly from each institution attended. All credentials become the property of the College and are kept on permanent file.
3. At time of application candidates should request the high school and college attended to submit a transcript of work completed to the Registrar.
4. Credentials submitted for entrance are evaluated by the Committee on Admissions and Promotions, which reserves the right to reject any applicant.
5. Upon notification of acceptance, applicants are required to submit a deposit of \$50, refundable to veterans upon receipt of Certificate of Eligibility, and applied toward tuition fee to non-veterans.
6. Every student is required to report in person at the College on the dates specified for registration.

## VETERANS

Veterans preparing for admission to the Massachusetts College of Optometry should make certain that when application is made for a Certificate of Eligibility and Entitlement (V.A. Form 7-1953), they clearly indicate that they are taking a pre-optometry program of study and after completion of the program their training will be continued in a college of optometry.

## WITHDRAWAL

A student in good scholastic standing who is not subject to disciplinary penalties is entitled to honorable withdrawal at any time. But if a student ceases to attend classes during the school year without communicating with the Dean, his record will be marked to indicate failure in all courses for the semester in which he has absented himself. A student desiring to withdraw from the College should therefore request permission to do so from the Dean.

A student who has been granted an honorable withdrawal from the College may be reinstated subsequently, provided not too long a time has elapsed and provided further that changes in the curriculum do not render such readmission impracticable. Decisions in all cases rest with the Committee on Admissions and Promotions.

No student under the age of twenty-one shall be entitled to an honorable withdrawal without the assent of his parent or guardian furnished in writing to the Dean.



A CORNER OF THE LIBRARY

31/52

## FEES AND EXPENSES

### Tuition and Fees

Application fee (payable with application) .....	\$ 5.00
Matriculation fee (paid only once, on entry) .....	10.00
Tuition, per academic year (payable one-half at the beginning of each semester) .....	450.00
Student Publication Fee (per year) .....	2.00
Student physical examination fee (payable only once, by new students) .....	5.00
Microscope rental fee (per year) (Students owning microscopes are permitted to use them in microscopic laboratory courses.) .....	5.00
Clinical fee (payable by senior students only: one half at the beginning of each semester) .....	10.00
Special and retake examination fee (per examination) .....	2.00
Transcript of credits (each copy after the first) .....	1.00
Graduation fee .....	15.00

### Books, Supplies, and Instruments

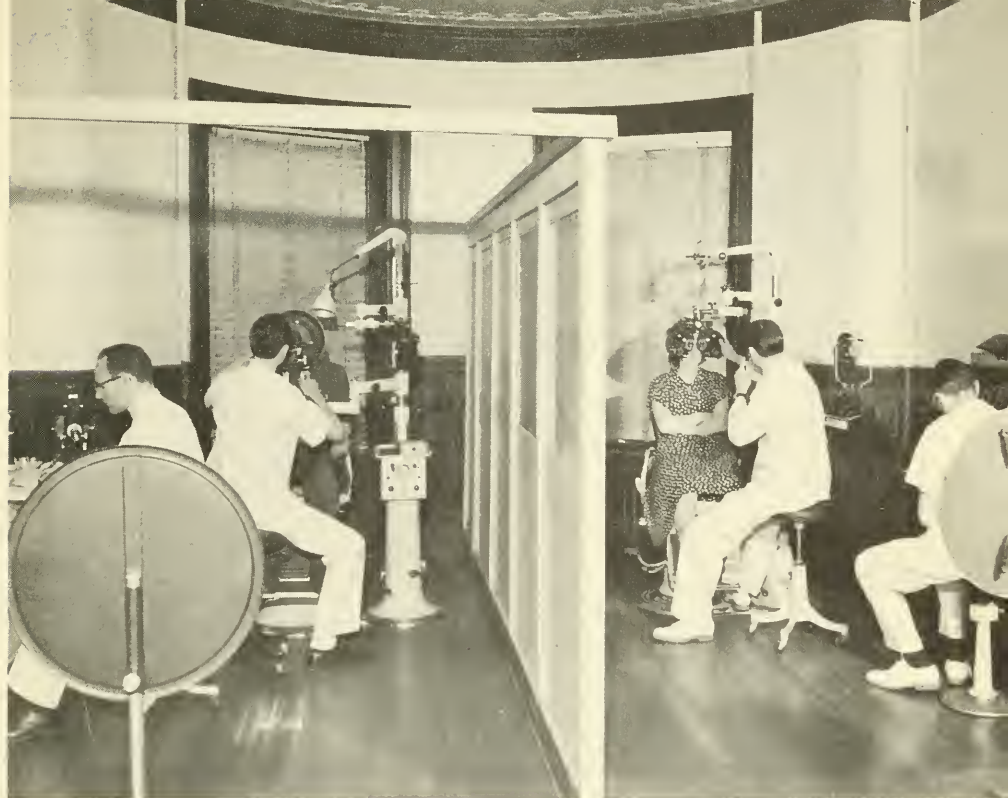
Students are required to equip themselves with the prescribed textbooks, instruments, and supplies. The cost of books and supplies in the first year is about \$40; in the second year, about \$52; in the third year, about \$34; and in the fourth year, about \$45.

The following equipment is required of all students during their period of training: trial lens set, trial frame, diagnostic set, mechanical optics tool kit, and dissecting set. This equipment amounts to about \$300 under present market conditions.

Each student assigned to clinics is required to provide himself with regulation apparel, and to keep it laundered and neat looking at all times.

The living expenses in Boston compare favorably with those met in other educational areas. The neighborhood is abundantly supplied with housing and eating facilities for students.

The faculty reserve the right to make such additions and changes in the list of prescribed textbooks, instruments, and equipment as are deemed advisable.



TYPICAL EXAMINING ROOMS

## REFUNDS

The College provides all instruction and accommodation on an academic term basis; no refunds are granted except when students are compelled to withdraw to enter the armed forces of the nation. When a refund is granted, such refund is computed on the following basis:

<i>Period of Attendance</i>	<i>Portion of Tuition Charged</i>
One week or less	10 percent
Between one and two weeks	20 percent
Between two and three weeks	40 percent
Between three and four weeks	60 percent
Between four and five weeks	80 percent
After five weeks	100 percent

Matriculation, and other fees are not refundable.

Dishonorable dismissal or expulsion does not entitle the student to a refund.

## GRADES

Examinations are held at the end of each semester. Grades in lecture courses are reported in the form of percentages, which are interpreted as follows:

90 — 100	Excellent
80 — 89	Above average
70 — 79	Average
60 — 69	Condition
Below 60	Failure

In laboratory courses, the only grades reported are Incomplete and Complete.

No grades are issued to a student before he has discharged his financial obligations to the College.

## PROMOTION

The Committee on Admissions and Promotions is charged with the responsibility of evaluating the scholastic achievement of all students. In two-semester courses grades for the first semester are primarily indicative of the progress each student is making. Promotion is based on the final grade for each course.

1. A student failing in two courses or conditioned in three courses is dismissed.
2. A student receiving two conditioned grades or one failure grade and one conditioned grade is required to take comprehensive examination(s) in such course(s).
3. A student receiving one conditioned grade is permitted to advance to the next year on probation.

Any student who has in the opinion of the Committee on Admissions and Promotions definitely proven his inability to fulfill the academic requirements of the College is dismissed.

## CONDITIONS LEADING TO GRADUATION

All candidates for the degree of B.S. in Optometry must be approved by the Committee on Admissions and Promotions as having met the following requirements:

1. Credit for all courses in the curriculum must be earned by regular enrollment and attendance in this College or by transfer of credits satisfactorily earned in an approved educational institution.
2. All clinical assignments must be completed.
3. Because of the differences in curricula of colleges of optometry, the last two years must be successfully completed in this College.
4. All financial obligations to the College must be met.
5. All rules and regulations of the College must be complied with.

## DEGREE

The Massachusetts College of Optometry is authorized by the Board of Collegiate Authority to grant the degree of Bachelor of Science in Optometry upon satisfactory completion of the requirements for graduation.

## REQUIREMENTS FOR PRACTICE

Inasmuch as the optometry law of each state fixes the requirements for examination for licensure, it will be well for the prospective student to acquaint himself with the requirements of the state wherein he intends to practice. This information may be obtained by communicating with the secretary of the examining board in optometry.

## POLICY ON CHANGES OF PROGRAM AND FEES

The College reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses.

The College reserves the right to change its tuition fee and other fees, the requirements for graduation, and other regulations. No change in fees will become effective, however, until the school year following that in which it is announced.

Any changes in policy will be applicable to all students in the school, including former students who may re-enter.

## HONORS AND AWARDS

Graduation with honors is conferred upon students in the graduating class for distinguished scholarship. Students who have earned a grade average of 95 to 100 graduate Summa Cum Laude; those who have earned a grade average of 90 to 95 graduate Magna Cum Laude; and those who have earned a grade average of 85 to 90 graduate Cum Laude.

### THE THEODORE F. KLEIN MEMORIAL AWARD

Each year the Board of Trustees of the Massachusetts College of Optometry offers an award of \$200 to that member of the freshman class who achieves the highest scholastic average in all courses of the freshman curriculum.

### THE JOSEPH J. SCANLON AWARD

This award is made available annually by the Zeta Chapter of the Omega Epsilon Phi Fraternity to that member of the senior class who has the best record for efficiency in the conduct of clinical work.

### THE LESTER J. EPSTEIN AWARD

This award is made available annually by the Pi Omicron Sigma Fraternity to that member of the senior class who achieves the highest grades in theoretical and applied optometry.

### VALEDICTORY AWARD

This award is made available annually by the faculty of the Massachusetts College of Optometry to that member of the senior class who achieves the highest general average in the four years of work.

### DEAN'S LIST

A dean's list, issued at the end of each semester, contains the names of students who have received an honor grade in each course with a general average of 85 or better, for all courses taken during the preceding period.



A CORNER OF THE ORTHOPTICS CLINIC

## STUDENT ACTIVITIES

The Massachusetts College of Optometry regards student activities as an integral part of its educational program and encourages the participation of students in extra-curricular activities. To this end, the students will find organizations and activities which provide opportunities for rounding out the scholastic program.

**GLEE CLUB.** Members of the College Glee Club are selected at the beginning of the year and meet for rehearsals during each term. This organization is under the supervision of a trained conductor.

**CAMERA CLUB.** The Camera Club of the College welcomes students interested in photography. The College has provided the Club with two dark-rooms for developing and printing.

**BASKETBALL.** While it is not feasible for a professional school to develop elaborate intercollegiate athletics, the College sponsors a basketball team which plays in the Greater Boston Small Colleges League.

**STUDENT COUNCIL.** The Student Council is an organization of representatives chosen by the students according to the terms of a constitution duly drawn up and adopted by the student body. The Council serves with a faculty advisor in the consideration and solution of problems presented to it by the administration and by the students. The Council has been most successful in its work of serving both the students and the administration in establishing and maintaining cooperation and good spirit.

**PUBLICATIONS.** The *Scope*, a monthly publication prepared, edited, and published by the students with the counsel of a faculty adviser, contains technical articles, school and social news, and other matters of interest to the student body.

The annual year book, *Reflections*, is published by the graduating class. It contains the class history, pictures of all the graduates, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and subjects of interest to the graduating class.

**FRATERNITIES AND THE SORORITY.** There are at present two Greek-letter fraternities and one sorority. Each organization is provided with a faculty adviser who is responsible for the proper administration of its affairs. Elected representatives from each organization make up the Pan-Hellenic Council, a body which has preliminary jurisdiction over fraternity and sorority regulations.

**CLASS ORGANIZATION.** Each of the classes elects its own officers and carries on activities as a class. Social functions are sponsored by the classes throughout the year. The senior class plans a number of activities just prior to Commencement.

## ALUMNI ASSOCIATION

The alumni of the Massachusetts College of Optometry are organized to promote the welfare of the College, to establish a mutual beneficial relationship between the College and its alumni, to sponsor post graduate educational programs, and to perpetuate the spirit of fellowship among members of the Association.

## STUDENT HEALTH

Upon entering the College, each student is given a health examination for the detection of disease and physical defects which might interfere with his success as a student as well as in the practice of optometry. Medical advice and counsel will be given to those who are in need of medical attention.

A first-aid room is maintained in the Administration Building where the school physician may give treatment for minor illnesses and minor accidents.

## STUDENT COUNSELING

A carefully integrated plan of guidance, under the direction of the Faculty Committee on Student Counseling, has been organized to give whatever help may be needed by the students. The program consists of four services, namely:

1. Academic Counseling.
2. Health Counseling.
3. Socio-psychological Counseling.
4. Professional Counseling.

In addition, the services of all members of the Faculty are available for advice and guidance and personal relations between students and instructors are unusually close, thus making the counseling program remarkably effective.

## LIVING FACILITIES

The College does not maintain dormitories, but students may secure comfortable living quarters in the immediate vicinity.

The Y.M.C.A., 316 Huntington Avenue, has a register of inspected and approved rooming houses for men students.

Women students may secure rooms and board at reasonable rates at the Students House, 96 The Fenway; The Franklin Square House, 11 East Newton Street; or Brooke House, 79 Chandler Street, all of which are for women only. Early reservations are advisable.

# CURRICULUM

## First Year

<i>First Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>	<i>Second Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>
General Physics	4	2	5	General Physics	4	2	5
General Psychology	2	0	2	General Psychology	2	0	2
Analytical Geometry	3	0	3	Calculus	3	0	3
General Zoology	4	2	5	Vertebrate Zoology	4	2	5
Optometrical Orientation	1	0	1	Optometrical Orientation	1	0	1
Introduction to Semantics	2	0	2	Introduction to Semantics	2	0	2
	<u>16</u>	<u>4</u>	<u>18</u>		<u>16</u>	<u>4</u>	<u>18</u>

## Second Year

<i>First Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>	<i>Second Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>
Physiological Optics I	3	2	4	Physiological Optics I	3	2	4
Geometrical Optics I	3	2	4	Geometrical Optics I	3	2	4
Ophthalmic Optics I	3	2	4	Ophthalmic Optics I	3	2	4
Abnormal Psychology	2	0	2	Visual Psychology	2	0	2
Human Anatomy and Physiology	3	2	4	Human Anatomy and Physiology	3	2	4
Theoretical Optometry I	3	2	4	Theoretical Optometry I	3	2	4
Physical Optics	2	0	2	Illumination	2	0	2
	<u>19</u>	<u>10</u>	<u>24</u>		<u>19</u>	<u>10</u>	<u>24</u>

## Third Year

<i>First Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>	<i>Second Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>
Physiological Optics II	3	2	4	Physiological Optics II	3	2	4
Geometrical Optics II	3	2	4	Geometrical Optics II	3	2	4
Ophthalmic Optics II	3	2	4	Ophthalmic Optics II	3	2	4
Ocular Anatomy and Physiology	3	1	3½	Ocular Anatomy and Physiology	3	1	3½
Theoretical Optometry II	4	4	6	Theoretical Optometry II	4	4	6
General Histology	2	2	3	Ocular Histology	2	2	3
General Pathology and Bacteriology	2	1	2½	General Pathology and Bacteriology	2	1	2½
	<u>20</u>	<u>14</u>	<u>27</u>		<u>20</u>	<u>14</u>	<u>27</u>

## Fourth Year

<i>First Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>	<i>Second Semester</i>	<i>Lecture</i>	<i>Lab.</i>	<i>Credit</i>
Physiological Optics III	1	0	1	Physiological Optics III	1	0	1
Ophthalmic Optics III	2	2	3	Ophthalmic Optics III	2	2	3
Embryology	2	0	2	Contact Lenses	1	1	1½
Applied Ophthalmology	2	0	2	Applied Ophthalmology	2	0	2
Theoretical Optometry III	4	2	5	Theoretical Optometry III	4	2	5
Visual Training and Orthoptics	2	0	2	Visual Training and Orthoptics	2	0	2
Applied Optometry	3	0	3	Applied Optometry	3	0	3
Ethics, Economics, and Jurisprudence	1	0	1	Ethics, Economics, and Jurisprudence	1	0	1
Ocular Pathology	3	1	3½	Ocular Pathology	3	1	3½
Clinical Optometry	0	5	2½	Clinical Optometry	0	5	2½
	<u>20</u>	<u>10</u>	<u>25</u>		<u>19</u>	<u>11</u>	<u>24½</u>

## DESCRIPTION OF COURSES

### ANATOMY AND PHYSIOLOGY

*Human Anatomy and Physiology:* This course includes the study of the essential features of human anatomy and physiology presented through lectures, and practical demonstrations with prepared human specimens, skeletons, models, and charts. The course is supplemented by laboratory exercises including experiments and studies of blood circulation, measurements of blood pressure, blood physiology, and some blood chemistry, including the study of action currents by means of electrocardiographs, frog and turtle experiments, experiments in physiology of nerves and muscles, action of digestive enzymes, and urinalysis. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Ocular Anatomy and Physiology:* The purpose of this course is to give the student a thorough knowledge of the anatomy and physiology of the eye and its appendages. It consists of lectures, demonstrations, lantern slides, charts, models, and dissection of animal eyes. 3 hours lecture; 1 hour laboratory; 7 hours credit.

*General and Ocular Histology:* The purpose of this course is to give the student a knowledge of general histology with a detailed knowledge of the structures of the ocular region. The cell and fundamental tissue are considered basic and of primary importance in general and ocular anatomy and pathology. The lectures are supplemented by laboratory work including the study of microscope and lantern slides. 2 hours lecture; 2 hours laboratory; 6 hours credit.

*Embryology:* Basic principles of general embryology are presented. Ocular embryology is presented in detail. Some of the topics included in general embryology are oögenesis, spermatogenesis, fertilization, the development of the primary germ layers, the development of the brain cavities and nervous system, foetal membranes, the embryological development of the various structures of the eye. Emphasis is placed upon ocular anomalies. 2 hours lecture; 2 hours credit.

### BIOLOGY

*General Zoology:* Representative invertebrate animals are studied in detail, with emphasis upon zoological principles and physiological functions. 4 hours lecture; 2 hours laboratory; 5 hours credit.

*Vertebrate Zoology:* Representative vertebrates are studied in detail with emphasis on the skeletal homologies of various groups. Evolution is treated with regard for the foregoing, also genetics and comparative embryology. 4 hours lecture; 2 hours laboratory; 5 hours credit.

### MATHEMATICS

*Analytical Geometry:* This course includes the study of points in rectangular and polar coordinate systems; distance, slope, angle between lines; loci; straight line, circle, conic sections; polar and parametric equations; tangents and normals; curve tracing; algebraic and transcendental curves; translation and rotation of axes, point, line, plane in space; quadric surfaces and sections. Adequate preparation in algebra and trigonometry is presupposed. 3 hours lecture; 3 hours credit.

*Calculus:* This course includes the study of the functions and functional notation; slope of a curve; limits and limit theorems (without proof); the derivative; differentiation of algebraic functions; maxima and minima; rates and differentials; indefinite integrals; constant of integration; definite integral; area under a curve; differentiation of exponential, logarithmic, trigonometric functions; integration of exponential, logarithmic and trigonometric functions. 3 hours lecture; 3 hours credit.

## OPTOMETRY

*Optometrical Orientation:* This course includes the history and development of optics and optometry, organization of optometry, optometry and humanity, trend of optometry, optometry's contributions to visual science, problems confronting optometry, objectives of optometry. 1 hour lecture; 2 hours credit.

*Physiological Optics I:* This is a study of the functions of the various parts of the eye associated with the phenomena of vision, including refraction and refractive errors, theories of accommodation, mechanism of accommodation, astigmatism, the schematic eye, cardinal points, catoptric images, axes and planes of the eye, aberrations, entoptic phenomena, and the optics of ophthalmometry, ophthalmoscopy, and retinoscopy. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Physiological Optics II:* This is a continuation of Physiological Optics I dealing with the retina and retinal stimuli, including photopic and scotopic vision, after-images, Weber's law, Fechner's law, critical fusion frequency, color vision, theories of color vision, color blindness, extra-ocular muscles, binocular vision, heterophorias, strabismus, accommodation and convergence. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Physiological Optics III:* This is an additional study of binocular vision, including visual acuity and visual efficiency, visual projection, stereopsis, the Pulfrich phenomenon, stroboscopic motion, retinal images, eikonic magnification and a general review of Physiological Optics I and II. This course is supplemented by demonstrations. 1 hour lecture; 2 hours credit.

*Theoretical Optometry I:* This course is designed to prepare the student for actual clinical practice. The subjects presented are introductory in nature and serve to orient the student. The course includes nomenclature, terminology, definitions, measurement of vision, objective refraction methods, subjective refraction methods, check tests, contents of the trial case, ophthalmoscopy (supplemented by a large variety of lantern slides illustrating physiological and pathological variations from the normal), and the interrelationship of accommodation and convergence. This course is supplemented by demonstrations and practice exercises in all phases of instrumentation and by clinical practice of tests. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Theoretical Optometry II:* This is a continuation of Theoretical Optometry I. It includes the study of refractive and muscular anomalies, accommodation and convergence reserves and relationship, external examining, history-taking, symptomatology, etiology, stereopsis, and visual skills. Special emphasis is laid on the important features of a complete examination by methods of optometry. This course is supplemented by demonstrations and practice exercises in preparation for actual clinical practice on patients in the clinic. 4 hours lecture; 4 hours laboratory; 12 hours credit.

*Theoretical Optometry III:* This is a continuation of Theoretical Optometry II. It includes the study of the philosophy of tests conducted in routine examining from the standpoint of diagnosis and corrective procedures, visual field study, strabismus, and special devices. 4 hours lecture; 2 hours laboratory; 10 hours credit.

*Applied Optometry:* Procedure in case analysis is covered, with particular attention to symptomatology, interpretation of the results of tests, syndromes, formation of diagnostic units, etiology, and corrective procedures. Clinical conference periods are devoted to the discussion and analysis of various cases examined in the clinic. 3 hours lecture; 6 hours credit.

*Contact Lenses:* This is a study of the history and development of contact lenses; description, methods of fitting and adjusting all modern types; impression-making; trial case techniques; corneal type. 1 hour lecture; 1 hour laboratory; 1½ hours credit.

*Ophthalmic Optics I:* This is a study of the classification and description of ophthalmic lenses; physical characteristics of single vision lenses; prisms; decentration, neutralization, transposition and axis marking. Laboratory practice includes classification of lenses, axis marking, neutralization, decentration and edging. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Ophthalmic Optics II:* This is a continuation of Ophthalmic Optics I and includes the theory and use of mechanical optics laboratory instruments; anisometropic imbalances; facial measurements and principles of adjusting glasses to the face. Surface grinding procedures are described, including lining up and calculating for lens thicknesses. Laboratory practice includes advanced edging, assembling of zylonite and metal frames, and lining up of prisms. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Ophthalmic Optics III:* This is a continuation of Ophthalmic Optics II and includes the consideration of special lenses including iseikonic, corrected, high-index glass, absorption, and safety glasses. Bifocal and trifocal lenses are discussed in detail from both a theoretical and a practical standpoint. Laboratory practice includes assembling of lenses in rimless mountings; practice in facial measurements and adjusting of glasses to the face; use of mechanical optics laboratory instruments; lining up of bifocal lenses. 2 hours lecture; 2 hours laboratory; 6 hours credit.

*Clinical Optometry:* This is a course in clinical training under the guidance and supervision of experienced clinical instructors in making complete optometric examinations. Preliminary examinations and diagnoses are made by senior internes in the clinic on out-patients. The internes' observations and conclusions are verified and discussed by the clinical instructors. 5 hours clinic; 5 hours credit.

*Visual Training and Orthoptics:* This is a study of the history of orthoptics, visual skills routine and interpretation of results, visual training procedures in heterophorias and heterotropias, vision training in myopia, consideration of reading disabilities, training procedures in anomalous accommodative responses. 2 hours lecture and demonstration; 4 hours credit.

*Optometrical Ethics, Economics, and Jurisprudence:* This course includes the meaning of professionalism and the standards of professional conduct, a study of legal and ethical codes of optometry, problems of the legal and economic position of the optometrist, office practice, patient control, and inter-professional relationships. 1 hour lecture; 2 hours credit.

## **PATHOLOGY**

*General Pathology and Bacteriology:* Material covered in this course consists of the study of the fundamentals of general pathology, bacteriology including immunology. The subject matter includes inflammation, repair, regeneration, retrograde changes, disturbances of circulation, contagious diseases, chemical poisons, vitamin deficiencies, endocrines, blood studies, disturbances of growth, the nervous system, and the gastro-intestinal tract. The course also deals with general and special bacteriology and the mechanism of immunity. 2 hours lecture; 1 hour laboratory; 5 hours credit.

*Ocular Pathology:* This course aims to give the student careful and detailed instruction in the recognition of pathological conditions of the eyeball and its appendages and in the differentiation between healthy and abnormal states. The didactic lectures are supplemented by observation of pathology cases as demonstrated in the clinic under the direction of a physician. The laboratory work consists of lantern and microscopic slides illustrating various pathological conditions. 3 hours lecture; 1 hour laboratory; 7 hours credit.

*Applied Ophthalmology:* The aim of this course is to give the student a thorough knowledge of the ocular manifestations of systemic disorders. The course includes such subject matter as infections and infectious diseases, tuberculosis, virus infections, fungus infections, focal infections, drug and chemical intoxications, diseases of the nervous system, blood diseases, nutritional diseases, and diseases of the cardio-vascular system. 2 hours lecture; 4 hours credit.

## **PHYSICS**

*General Physics:* This course covers the subjects of basic measurements, vectors, work and energy, laws of fluids, heat, magnetism, electricity, simple harmonic motion, wave motion, sound, and fundamentals of light. The laboratory experiments follow closely the lectures and class work. 4 hours lecture; 2 hours laboratory; 10 hours credit.

*Physical Optics:* This course includes theories of light, velocity of light, interference, diffraction, polarization, double refraction, and spectroscopy. The lectures are supplemented by demonstrations. 2 hours lecture; 2 hours credit.

*Geometrical Optics I:* This is a general introduction to the study of optics. It treats of the fundamental principles and methods of geometrical optics underlying such subjects as lights, shadows, photometry, laws of reflection and refraction, reflection at curved surfaces, refraction at spherical surfaces, prisms, infinitely thin lenses. The lectures are supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Geometrical Optics II:* This course is a continuation of Geometrical Optics I. It includes the study of Gaussian and Newtonian forms of lens equation, equivalence of thin lenses, optical instruments, entrance and exit pupils, resolving and magnifying power of instruments, thick lenses, thin and thick compound systems, thin and thick prisms, achromatic and aplanatic systems. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory; 8 hours credit.

*Illumination:* This course presents the latest theories and practices for proper illumination of homes, schools, factories, offices, etc. It offers a new method of calculating and rating a lighting system. 2 hours lecture; 2 hours credit.

## PSYCHOLOGY

*General Psychology:* The aim of this course is to acquaint the student with the fundamental facts and theories of psychology. The course deals with a brief history of psychology and a survey of various schools that have contributed to psychology. This is followed by a study of the sensory, nervous and motor systems, drives, motivation, mental conflict, attending and perceiving, intelligence, learning and the formation of habits. The course concludes with a discussion of personality and its social setting. 2 hours lecture; 4 hours credit.

*Abnormal Psychology:* The purpose of this course is to make the student familiar with psychopathological states. Constant emphasis is placed on psychodynamics. The course begins with a brief history of psychopathology and the treatment of the mentally ill. This is followed by a study of the etiology, symptomatology and dynamics of the psychoneuroses, anxiety neurosis, conversion hysteria, the dissociations, affective neurosis, obsessive-compulsive and phobic states. Great stress is placed on the psychosomatic diseases. The course concludes with a discussion of the functional psychoses, the schizophrenias, manic-depressive psychoses and organic psychoses. 2 hours lecture; 2 hours credit.

*Visual Psychology:* This course is both applied and didactic. The student is expected to apply his knowledge of psychology to the field of vision. In addition to a study of the visual reaction system, visual perception, visual sensations and illusions of vision, the student is introduced to the relationship between visual anomalies and psychological factors. Psychological implications of myopia, strabismus, blepharospasm, ciliary muscle spasm, color blindness, amblyopia, and glaucoma are discussed. The student is expected to be able to evaluate and correlate the psychological and physiological findings. 2 hours lecture; 2 hours credit.

## INTRODUCTION TO SEMANTICS

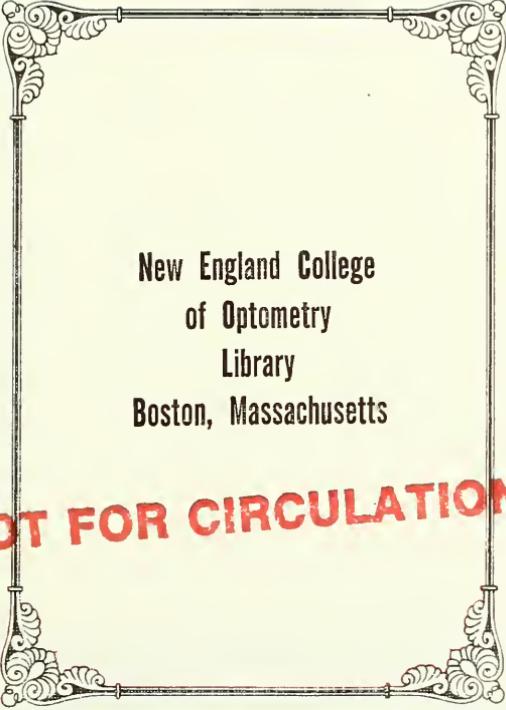
Students in this course will get a new orientation toward words and combinations of words through a consideration of the semantics of communication. This course is introductory to a field which is rapidly developing in area and in practical importance. Instruction provides a greater awareness of the power of words in more efficient and constructive human relations. The thesis maintained is that only a critical examination of words can lead to understanding the meaning of the thought, concept, idea, or thing symbolized by them. 2 hours lecture; 4 hours credit.



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